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ABSTRACT

This document is the fifth in a series of 12 early childhood program descriptions compiled by the Far West Laboratory for Educational Research and Development. The program described here is the Tucson Early Education Model (TEEM) located at the University of Arizona. The model is designed for Head Start programs and kindergarten through third grade Follow Through classes. Its objectives include language development, learning-to-learn skills, motivation, and social and academic skills. The instructional approach is based on activities which combine learnings from different subject areas. Children work in small heterogeneous groups, and although most activities are assigned, there is a free choice period each day. Included in the program are brief outlines of: (1) goals and objectives, (2) content and materials, (3) classroom activities, (4) parent involvement, (5) professional and paraprofessional training, (6) administrative requirements and costs, (7) program development and evaluation, and (8) program history and present (1971) status. (JMB)

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Early Childhood
Information Unit
November, 1971

Program Report

TUCSON EARLY EDUCATION MODEL

Project Director: Ronald Henderson

Arizona Center for Early Childhood Education
University of Arizona
Tucson, Arizona 85721

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SUMMARY

The Tucson Early Education Model (TEEM) for preschool through third grade is the project of the Arizona Center for Early Childhood Education at the University of Arizona. Marie Hughes was the first director and Ronald Henderson is the present director of the project. The model evolved from a project for Mexican-American children and retains the original emphasis on language development, although it now is used with children of all cultural backgrounds.

The objectives of the program are development of language competence, intellectual or "learning-to-learn" skills, motivation, and social and academic skills. The instructional approach is based on activities which combine learnings from different subject areas. For example, in a cooking project, children follow written directions, use new vocabulary, measure quantities, observe physical changes and afterward write reports. Children work in small heterogeneous groups. Most activities are assigned, but there is also a free choice period each day. The teacher's role is to design activities and arrange the classroom, provide models of language and behavior and reinforce the children.

Although in operation since 1965, the Tucson Model does not have published evaluation data. Evaluation performed by local school districts cannot be released without their permission. The developers state that standardized tests do not measure outcomes that they regard as important, such as increased motivation and verbal skill, therefore they hope to develop new instruments.

GOALS AND OBJECTIVES

For whom is the program designed?

The Tucson Early Education Model (TEEM) originated as a program for Mexican-American children in first through third grades. It is now used in preschool through third grade Head Start and Follow Through classes with children of all ethnic and cultural backgrounds.

What are the goals and objectives of the program?

The goal of the Tucson Early Education Model is to prepare children for later "participation in the technical, social and economic life of contemporary America." The objectives of the model are classified into four areas: 1) language competence, 2) intellectual base, 3) motivational base, and 4) societal arts and skills. *Language competence* includes learning linguistic labels, concepts, language forms, and an awareness of the function of language. By the term *intellectual base*, the developers mean all the skills assumed to be necessary for successful learning, such as the ability to attend, recall, organize stimuli (e.g., by color, shape, or size), plan, choose, predict, and organize behavior toward goals. *Motivational base* refers to attitudes such as a positive attitude toward school and learning, appreciation for learning, persistence, expectation of success, and willingness to change. *Societal arts and skills* include reading, writing, and arithmetic, as well as social skills such as cooperation and participation in a democratic process.

What is the rationale for the program emphasis and design?

The developers note that many low-income people lack certain skills, particularly language skills, to participate successfully in modern technical, social, and economic life. Low self-esteem often contributes to academic and vocational failure. In addition, the developers believe that traditional programs have not been successful in motivating children to learn. Thus, the developers hope to have developed an intrinsically motivating program designed to improve intellectual abilities (especially language competencies) and develop children's self-esteem.

How is the program to be used?

The Tucson Model is designed for use as a complete nine-month program for preschool (Head Start and kindergarten through third grade (Follow Through) classes.

What skills, concepts and attitudes are to be learned?

The program covers a wide range of skills, concepts, and attitudes. Children are expected to develop academic skills and concepts, "learning-to-learn" skills, and social skills, as well as attitudes related to self-concept and motivation. There is no specified set of learning objectives for the program. Rather than mastering a given set of skills, children are expected to progress generally, according to their individual levels of development, within the four areas described in the preceding section: 1) language competence, 2) intellectual base (learning-to-learn), 3) motivational base, and 4) societal arts and skills (including social and academic skills).

In the area of language competence, the child should learn labels, concepts, language forms, and "awareness of the function of language." Intellectual base includes skills for organizing the environment, such as the ability to group objects by size, color, or form, or to sequence events according to time. It also includes complex behaviors such as the ability to attend, recall significant events, organize behavior toward specific goals, evaluate alternatives, choose, plan, develop expectations, discriminate important behaviors in others and imitate. The developers point out that intellectual base skills have not been fully identified or defined and are seldom taught formally. Motivational base refers to attitudes and behaviors related to "productive social involvement", including positive attitudes toward school and the learning process, appreciation for learning, willingness to persist at learning tasks, expectation of success and willingness to change. Reading, writing, and arithmetic, while important, are considered "only a small portion of the total program."

How is the curriculum organized?

There is no set curriculum for the program. Learning activities are said to be "orchestrated." The term *orchestration* as used in the program means that skills and concepts from different subject matters are taught in the same activity. For example, making ice cream is an orchestrated experience because the teacher introduces new words and concepts, has the children measure, multiply, and follow directions in the recipe. The children must plan and work cooperatively. Ideally an orchestrated experience would reflect all four principal goals of the program.

The school day is arranged around such orchestrated activities, primarily "life experiences" such as food preparation or woodworking. The teacher exploits the opportunities that arise in these situations to teach new concepts, vocabulary, language forms, arithmetic, reading, writing, mental processes and attitudes.

What student materials are provided or suggested?

Student materials are not provided by the developers. Schools using the model will have to acquire standard manipulative materials such as Cuisenaire rods, blocks, games and puzzles. Books, housekeeping equipment such as toy stoves and utensils, and dress-up clothes are needed. Many of the materials can be made by the children and/or the teacher. The developers recommend a primary typewriter, tape recorder and record player, plus equipment for "life experiences" such as a sewing machine and woodworking equipment. Many of the materials are common household items, scrap wood and other miscellaneous items.

The developers supply a list of suggested materials for interest centers. For the reading center, they suggest teacher-made charts of riddles, posters, book reports, filmstrips, a peep-box showing a scene from a book, Junior Scrabble, reading games and books made by the class. For the writing center they recommend such things as colored marking pens, stationery and post cards, a box of newspaper headlines, poem "starters" to finish and book jackets. For the arithmetic center they recommend Cuisenaire rods, a feltboard, bead frame, games, worksheets, rulers, measuring cups, spoons and scales. A quantity of other items are suggested for other possible interest centers, such as centers for science, social studies, music, art, games and construction.

What materials are provided or suggested for the teacher?

The Tucson staff supplies most of the teacher materials, consisting of guidelines, discussions and suggestions. There are no lesson plans. The staff provides teachers with, for example, printed suggestions for record keeping, a list of suggested materials for interest centers, discursive materials on the teacher's role and program philosophy, and more topical papers such as the following: *Reading in an Orchestrated Second Grade, Some Practical Ideas for Language Learning, Mapping: An Introduction to Symbols,* and *Orchestrated Instruction: A Cooking Experience.* The staff also recommends some published materials, among them the teacher's guide to The Owl Reading Program (Holt, Rinehart and Winston), and *The Language Experience Approach to Reading* by Dr. Rach Van Allen of the University of Arizona.

What materials are provided or suggested for student evaluation?

The developers recommend that Head Start and Follow Through schools using the model use the Metropolitan Achievement Test to satisfy local requirements for testing. However, they state that there are no adequate standardized tests to measure what the model attempts to teach. At present, the Tucson staff is developing and testing more appropriate evaluation instruments. They include observation instruments, record keeping aides, a test of student preference on school activities (the Activity Preference Task), and techniques of interaction analysis which examines the quality of communication exchanges between teacher and child.

CLASSROOM ACTIVITIES

What is the teaching/learning strategy?

The core of the instructional approach is the *orchestrated* activity. *Orchestration* is used to describe the way skills and concepts from different subject areas are combined in one activity. For example, in a cooking activity children use mathematics, read, learn new vocabulary, observe physical changes in matter and afterward write about the activity. Many orchestrated activities are "life experiences," such as cooking or woodwork. Others are developed around a collection of related articles such as shoes, chains, or jewelry, which serve as the focus for such activities as making comparisons, measuring or weighing and writing.

The teacher's primary role is that of "arranging and maintaining an environment for learning." The teacher selects and arranges materials and plans activities on the basis of student interests and levels of development. He or she may direct an activity or have the group carry it out independently. The teacher generally uses inquiry rather than a didactic approach, allowing spontaneity and taking cues from student questions and interests.

In addition to orchestration, the teacher uses three other principles: individualization, modeling and reinforcement. Individualization is based on small group instruction and a free choice period. Small group activities are designed not only to reflect the interests and skills of the group but to allow each child success at his own level. For example, the teacher might place on a table such items as scales, rocks and objects of different weights, writing materials and graph paper. Each child would be permitted to find out what he could about the weights of the objects but not required to perform any particular operations. One child might wish simply to weigh different objects, another might record and compare weights and a third graph his comparisons.

The program emphasizes the importance of teacher acceptance of each child, and incorporates the teaching to build upon the child's language and cultural heritage. Rather than correcting the child's language, she uses the technique of *modeling*. The teacher consciously sets examples of behavior or language on the principle that young children have a natural tendancy to imitate adults.

For example, the teacher would teach politeness by being polite to the child and would seek to improve his grammar by using good grammar. Teachers also make extensive use of social reinforcement--praise, encouragement, hugging, and the like, rather than tangible rewards such as candy or gold stars. The developers believe that praise is more effective than criticism in promoting student achievement.

What classroom organization is best suited to this program?

The classroom is arranged into interest centers. Some possible interest centers suggested by the developers are ones for reading, writing, arithmetic, science, social studies, music, construction and games. Interest centers are equipped with materials suitable for children at different levels of development. Each center can accommodate about five children.

The children work in small heterogeneous groups on the theory that in a heterogeneous group slower children learn from their more able peers. Groups are called "committees," and the children take turns being chairman. When the committee works independently of the teacher on activities requiring cooperation, the chairman is responsible for assigning tasks and coordinating the project. Usually the teacher meets with the chairman beforehand to explain the purpose of the activity when she feels the group is ready. As the children become better able to work independently in groups, the groups rotate so that each group undertakes all the activities by the end of one or several days.

There is also a free choice period when each child may select among pre-planned activities and materials, and during committee time any child may leave his group and go to certain centers designated as free choice, such as the game center or housekeeping area.

How are students evaluated?

Observation and anecdotal records are the major means of ongoing student evaluation. The developers provide teachers in the model with printed recommendations for observing and keeping good anecdotal records. Although they recommend the Metropolitan Achievement Test to satisfy local evaluation requirements, they state that it does not measure many kinds of learning the program is designed to teach. (See Goals and Objectives.) The Tucson staff hopes to develop new evaluation

instruments that will measure these expected outcomes. For example, a test to measure increased interest in learning activities is being evaluated at the present time.

What is a representative lesson?

Many activities are planned around intellectual kits, collections of items in a given category such as jewelry, seeds, containers, buttons, clothing or scales, to name only a few possibilities. The teacher plans the use of the kit to incorporate objectives from each of the goal areas of the program. As a planning aid, teachers often develop a file card for each kit. The following is an example of such a card (Note: Dictionary definitions are included to assure that the teacher has a full range of meanings of the concept in mind as she develops the kit and plans its use with a group).

Hinges

Dictionary Definitions

- A jointed or flexible device on which a door, lid, or other swinging part turns.
- A determining factor.
- Turning point.
- A bodily joint that permits motion in one plane.

Possibilities for Materials

hasp	spring clothespin	hair clamps
butt hinge	pill box	bow-tie
strap hinge	scissors	wallet
T or H hinge	tweezers	glasses frames
pliers	nutcracker	match folder
		new and used hinges

Instructional Possibilities

- Exploration: Manipulation of hinges in an interest center.
- Elaboration: Structured activity: Let children discuss, build on, and extend their knowledge (Example: "Yes, that is a clothespin.

Where have you ever seen anything like this before? How was it used? If you had one, how could you use it?")

- Suggest looking for things in the room or on the body which work the same way.
- If the term hinge has not come up, introduce and use it in identifying hinges in the environment.
- Identify book hinges and introduce one way to make books with hinged covers.
- Use books to record information or make drawings of hinges.
- Make comparisons with things that hinges are like and not like.
- Discuss differences in size and shapes.
- Discuss differences in materials.
- Discuss differences in weight.
- Discuss differences in length.
- Discuss differences in forms.

PARENT INVOLVEMENT

To what extent are parents involved?

There is no specific parent involvement component, although the developers have stated their intention to develop one. At present, schools using the Tucson Model have often devised their own ways of involving parents. Parents are encouraged to visit the classroom, and serve as parent volunteers or teaching aides. The developers note that parent involvement should accomplish a two-way communication between the home and the school. Parents should be informed of their children's progress at school and encouraged to take an active interest in their children's education. On the other hand, schools should learn to relate as much as they can of the school experiences to the knowledge and abilities the child brings from his own cultural background.

What materials are provided for training parents?

There are no materials developed specifically for training parents.

PROFESSIONAL AND PARAPROFESSIONAL TRAINING

What skills or knowledge do teachers require?

The developers have defined teaching as *interaction* between teacher and students. They describe "good" teaching behavior in their model as "knowledgeable and purposeful interaction with children." More precisely, the Tucson Model teacher must be skilled in applying the four principles of the classroom program: reinforcement, individualization, modeling, and orchestration. That is, he or she must develop skill in reinforcing desired student behavior, in planning and conducting activities to make them as individual as possible, in modeling desired language and behavior, and in designing activities that will combine skills, concepts and behaviors related to all the goals of the program. In addition, it is important that the teacher be able to accept children and their behavior "for what they are and not for what they are supposed to be." The teacher must also possess the ability to set up and organize the classroom environment, and to plan and evaluate child behavior and activity.

Are training programs available for professionals and paraprofessionals?

The Center for Early Childhood Education in Tucson provides both preservice and inservice training. The Center provides two or three community preservice training sessions a year. These one-week training sessions are attended by local Follow Through directors, teachers and community personnel. The local school also appoints its own program assistant to receive training from the Center, and in turn holds preservice and inservice training for local teachers and aides. Program assistants are generally trained during summer workshops. In the summer of 1971 there were two two-week workshops for experienced program assistants and one four-week workshop for inexperienced program assistants. The Tucson Center does not directly train local teachers and aides. It is the function of the program assistant to provide ongoing training. However, members of the Tucson staff may serve as consultants and make periodic visits to the local schools to assist program assistants and teachers with problems that may arise.

What materials are available for professional and paraprofessional training?

The developers have produced *slide sets* and *videotapes* for training purposes. Each Program

Assistant has a *resource* book to help her train teachers and aides. These materials are not commercially available as of November 1971.

ADMINISTRATIVE REQUIREMENTS AND COSTS

What facilities and physical arrangements are needed or recommended?

The classroom must be equipped with moveable chairs and tables. The room should be arranged into several interest centers such as for art, math, reading, writing, music, science, games, social studies and construction (although not necessarily all of them).

What special equipment is needed or recommended?

The developers suggest a number of desirable pieces of equipment, such as a sewing machine, primary typewriter, tape recorder, record player and woodworking equipment. They recommend a hot plate in each classroom for cooking activities and an oven which can be shared by all classes in the school. No one piece of equipment is essential.

What professional and paraprofessional personnel are needed or recommended?

A teacher and one aide are recommended for each classroom. There is also a program assistant to train a maximum of 10 teachers and aides. The program assistant acts as the direct link between the model and the local school. In addition to his training duties, he also acts as a "change agent," bringing innovative ideas to the teacher to implement in the class.

What does it cost to implement the program?

The cost per pupil for comprehensive services, including health and psychological services, is about $1,300 per year.

Are the curriculum materials available?

All materials required to implement the model are available from the Center for Early Education in Tucson, Arizona.

What is the research base?

The model is based primarily on social learning theories, especially studies by Bandura and Walters indicating that children learn at least as much by imitating as through external rewards. Zimmerman and Rosenthal of the University of Arizona have added support to the social learning approach in further studies showing that children can acquire cognitive skills (such as question asking) through imitation. The program has also been influenced by the cognitive theories of Piaget, although the developers do not accept the necessity for Piagetian structuring. Bruner's insistence on concrete learning experiences has also influenced the development of the program as has Gagne's conceptual hierarchy, although the developers do not believe that all children need exactly the same steps in acquiring a concept or skill.

The program's approach to promoting language development has been influenced by such people as Roger Brown and Ursula Bellugi, linguists and child development specialists, who have studied the stages in the acquisition of language in children from infancy. The work of Courtney Cazden, of Harvard's Childhood Education faculty, on the subcultural differences in children's language was also important, as were the discoveries of William Labov, sociolinguist with the Center for Applied Linguistics, that children's speech patterns vary according to the situation and that dialect is a complete, fully developed language in its own right. The program derives its theoretical bases and practices from the work of these specialists.

How was the program developed and tested?

The Tucson Model evolved from a cooperative project between the University of Arizona and Tucson School District No. 1 to develop a new approach to early education for Mexican-American children from Tucson poverty areas. The design was influenced by the ideas of Marie Hughes, then Project Director. Modifications have occurred on the basis of classroom observation and informal feedback from teachers rather than through a formal development-evaluation-revision cycle.

What evaluation studies have been conducted?

The Center in Tucson has collected little data with standardized measures. Data collected by the local districts using primarily the Metropolitan Achievement Tests is reported "mixed" and cannot be released without the consent of both the school authorities and the parents. The Tucson staff states that standardized tests are not adequate measures of the outcomes the program is designed to produce. For this reason, the staff has put its evaluation efforts into developing new instruments and evaluating their reliability and validity.

One such instrument under development is the Activity Preference Task (APT), designed to measure increased interest in school activities by having the child select his favorite activities from photographs of classroom and home scenes. Another is a classroom observation system with which field representatives can evaluate program implementation in classrooms. A third is a process analysis instrument on which program assistants report such data as how often they meet with teachers, aides or parents.

PROGRAM HISTORY AND PRESENT STATUS

What is the history of the program?

The Tucson Model began in 1965 as a three-year joint project of the University of Arizona and Tucson School District No. 1 to design a new program for young Mexican-American children. Dr. Marie M. Hughes represented the university and Mrs. Jewell Taylor, the district. At that time Mexican-Americans had the highest dropout rate in Tucson, and test results indicated that the gap between the achievement of Mexican-American and Anglo-American children increased as they progressed through the grades. By sixth grade, Mexican-Americans as a group were between one-and-a-half and three years below test norms. Data were similar for other minority groups, the rural poor, and families of unskilled parents living near subsistence level. The new program was implemented in 68 classes at grades one through three in eight Tucson schools.

In 1967 the Arizona Center for Early Childhood Education at the University of Arizona became responsible for continuing elaboration and evaluation of the project. In 1968 the Center was asked to be a Follow Through sponsor for 14 communities around the country.

Since its beginning the project has shifted its focus from only Mexican-American children to include children of all backgrounds. The program has been expanded downward to preschool and kindergarten.

What is the present status of the program?

The Tucson Model is implemented in 20 school systems across the country, from Alaska to New Jersey, in preschool through third-grade classes (Head Start and Follow Through) during 1971-72. In Tucson, the model has been experimentally used in fourth- through sixth-grade classes in one school.

SELECTED REFERENCES

Henderson, R. *Environmental stimulation and intellectual development of Mexican-American children--an exploratory project.* 1966, ERIC: ED 010 587.

Henderson, R. Research and consultation in the natural environment. In *Psychology in the schools, 8, 4.* 1970, ERIC: ED 037 240.

Henderson, R., & Merritt, C. Environmental backgrounds of Mexican-American children with different potential for school success. *Journal of social psychology, 75.* 1968, 101-106.

Hobson, A. Systematic language modeling. In *Contemporary education, 40, 4.* Indiana State University, Terre Haute, Indiana, 1969, 225-227.

Hughes, M., Wetzel, & Henderson, R. *The Tucson early education model.* National laboratory on early childhood education. Document 70706-A-C-O-Y-01.